<u>Amendments to the Specification:</u>

Please replace the paragraph that begins on page 1, line ~~13~~ 14 with the following paragraph:

Currently, several technologies are used to measure viscosity for example, vibrating and frequency excited devices use the principal of a dampening effect to determine the resistance of a fluid to shear stresses, which is then correlated to viscosity. This method is widely ~~used, however~~ <u>used. However,</u> it requires a controller for excitation and is very dependent upon temperature variations and fluid composition.

Please replace the paragraph that begins on page 3, line ~~27~~ 24 with the following paragraph:

As illustrated in Figure 1, a sensing array or sensing assembly 12 of the system is attached to and positioned within a fluid line 14 by means of a pair of connectors 16 disposed at either end of the assembly. The sensing assembly comprises a housing 18 that acts as a conduit to transfer mass between both ends of the sensing assembly. A pair of shaped electrodes or arrays 20 are positioned within the conduit defined by housing 18. In an exemplary embodiment, the shaped electrodes comprise a wing shape (Figure 2) and are fixedly secured within the conduit defined by housing 18. Thus, there is no movement of the ~~conductors~~ <u>shaped electrodes</u> within the housing.

Please replace the paragraph that begins on page 4, line ~~7~~ 8 with the following paragraph:

The shaped electrodes or wings 20 are positioned in a parallel relationship with respect to each other in order to provide a gap disposed therebetween to measure changes in the dielectric constant and/or the conductivity of a fluid that passes through the gap. In accordance with an exemplary embodiment the shaped electrodes or wings are constructed out of a material that is non-corrosive and will not affect the performance of the sensor positioned therein. An example of such a material is 301 stainless ~~steel, of course~~ <u>steel. Of course,</u> other materials are

contemplated to be used with the sensing system of the present disclosure, such materials include but are not limited to the following; plastics, metals and alloys. In addition, the dimension of the wings in one direction may be around 6-7 mm allowing for the assembly to be placed within small fluid lines. Of course, and as applications vary, these dimensions may be greater or less than 6-7 mm.

Please replace the paragraph that begins on page ~~4~~ 5, line ~~28~~ 1 with the following paragraph:

Referring now to ~~Figures 1 and 2~~ Figure 2, force sensors 22 are connected to each of the electrodes in order to determine the stress at the base of these sensing parts. The value of the stresses can be correlated to the drag force of the shaped electrodes which in turn can determine the velocity of the fluid moving past them. The speed of the fluid and the information about the sectional area of the sensing housing (e.g., area) determine the flow rate of the fluid by using standard equations stored in the memory of a microprocessor adapted for use with the system.

Please replace the paragraph that begins on page 6, line ~~14~~ 15 with the following paragraph:

Thus, fluid capacitance is determined by measuring the dielectric constant of the fluid passing between the two electrodes. Also, the presence or lack thereof of metals (e.g., contaminants or desired materials) in the fluid is determined by measuring the conductivity of the same. The conductivity can be determined by using high frequency signals to induce a voltage in one electrode and measure the voltage in the other electrode wherein the voltages are measured by sensors on the electrodes. Also, the presence or lack thereof of biological or non-metals (e.g., contaminants or desired materials) in the fluid can be determined by measuring the characteristics of the ~~same~~ same, for example, by measuring fluid capacitance, which is affected by the presence or lack thereof of certain contaminants or desired materials. These measurements are then compared to known values of known fluid to determine the presence and percentage of the materials.

Correct typos made to claims of specification per amendment filed 1-21-05

Please replace the paragraph that begins on page 6, line 28 with the following paragraph:

The sensing assembly when determining the capacitance and/or conductivity as well as the viscosity of the fluids passing through the housing uses the ~~sensors~~ sensor's temperature readings in order to compensate its determined values due to thermal variations of the fluid. These temperature readings will be inputted into the desired formulas wherein temperature affects the resulting value (e.g., viscosity).

Please replace the paragraph that begins on page 7, line 11 with the following paragraph:

~~Each~~ Referring again to Figure 2, each of the aforementioned sensors are connected to an electronic circuit board 28 via a signal line 30 or a plurality of signal lines 30 adapted to transmit signals of the sensors to the circuit board. Of course, other means of communication of this information are contemplated to be within the scope of the present disclosure (e.g., optical, radio frequency and other equivalent means of signal transfer).

Please replace the paragraph that begins on page 7, line 25 with the following paragraph:

Alternatively, if the conduit is attached to or comprises a portion of a fluid communication ~~means~~ means, the electronics circuit board is disposed on the exterior of the conduit, and the electric circuit board is still sealed from the environment by a PCB seal (glass or epoxy), which will protect the electronics circuit board from contaminants.

Please replace the paragraph that begins on page 9, line 17 with the following paragraph:

Accordingly, and once provided with the data from the sensors disposed on the ~~wings~~ wings, the system will be able to determine the fluid condition and fluid flow as it ~~is~~ passes by the sensing array. In addition, and as an alternative embodiment and wherein the system is disposed within a ~~vehicle~~ vehicle, the executable code is adapted to only take readings when the vehicle engine is running.

Please replace the paragraph that begins on page 11, line ~~4~~ 7 with the following paragraph:

In addition, and since the sensing assembly is measuring the fluid in a dynamic state, ~~state~~ the actual condition of the fluid (e.g., mixed, stirred, turbulent) being received by the engine is being sampled by the assembly. Thus, an accurate reading of the fluid characteristics is being provided. Moreover, assembly can be adapted to provide continuous reading thus, as the flow rate or dynamic conditions change the assembly provides readings ~~consumeret~~ commensurate with such a state.

Please replace the paragraph that begins on page 11, line 18 with the following paragraph:

While the invention has been described with reference to an exemplary embodiment, it will be understood by those skilled in the art that various changes may be made and equivalents may be substituted for elements thereof without departing from the scope of the invention. In addition, many modifications may be made to adapt a particular situation or material to the teachings of the invention without departing from the essential scope thereof. Therefore, it is intended that the present disclosure not be limited to the particular embodiment disclosed as the best mode contemplated for carrying out this invention, but that the invention will include all embodiments falling within the scope of the appended claims. ~~Furthermore, no element, component, or method step in the present disclosure is intended to be dedicated to the public regardless of whether the element, component, or method step is explicitly recited in the claims.~~